

What is Claimed is:

1. A curtain wall structure comprising:

horizontal mullions spaced a predetermined distance apart from each other, and
vertical mullions spaced a predetermined distance apart from each other, wherein said
5 horizontal and vertical mullions are connected together to form a frame having a
plurality of openings therein;

support panels made of a light weight material connected to said frame, said
panels extending across said openings; and

10 tiles positioned on said frame, each of said tiles being adapted to be positioned
on the front side of said panels, wherein structural silicon is used to secure said tiles to
said panels.

2. The structure of claim 1, wherein each of said support panels has an angled
edge that extends around the perimeter thereof, said angled edge being adapted to
secure said panels to said frame and provide rigidity to said panels.

15 3. The structure of claim 1, wherein said support panels have a front surface that
extends substantially along the same plane as the front surface of said frame.

4. The structure of claim 2, wherein fasteners are used to secure said angled edge
of said panels to said horizontal and vertical mullions.

5. The structure of claim 1, wherein a gasket is provided between the perimeter of
20 said tiles and said frame to seal the space between said tiles and said frame.

6. The structure of claim 1, wherein a top retainer is provided along the upper edge
of said frame to retain the tiles that are located on the upper part of said frame, said top
retainer being connected to said upper edge of said frame along one of said horizontal

mullions, and wherein a bottom retainer is provided along the lower edge of said frame to retain the tiles that are located on the lower part of said frame, said bottom retainer being connected to said lower edge of said frame along another of said horizontal mullions.

5 7. The structure of claim 1, wherein in the space between adjacent tiles gaskets or sealants are provided to form a seal between said tiles and said frame.

8. The structure of claim 1, wherein each of said tiles has dimensions in the horizontal and vertical directions that are greater than the distances between the horizontal and vertical mullions, respectively, and wherein each of said support panels
10 has dimensions in the horizontal and vertical directions that are substantially the same as the distances between the horizontal and vertical mullions, respectively.

9. The structure of claim 1, wherein said panels have a first predetermined thickness, and said tiles have a second predetermined thickness, wherein said second predetermined thickness is greater than said first predetermined thickness.

15 10. The structure of claim 9, wherein each of said support panels has a horizontal edge portion extending around the perimeter that has a rearward dimension that is greater than said second predetermined thickness.

11. The structure of claim 1, wherein said tiles are made of porcelain or ceramic material.

20 12. The structure of claim 10, wherein said tiles are no thinner than about three eighths of an inch thick, and said support panels are made of aluminum that is about one eighth inch thick.

13. A curtain wall structure comprising:

horizontal and vertical mullions spaced apart from each other, wherein said horizontal and vertical mullions are connected together to form a frame having a plurality of openings therein;

support panels connected to said frame, each of said panels having substantially
5 the same size and shape as said openings, and having a perimeter edge extending normal to a front surface thereof, wherein said front surface of said panels extends along a plane that is substantially the same as or in front of the front surface of said frame; and

tiles connected to said frame and said panels, wherein structural silicon is used
10 to secure said tiles to said panels.

14. The structure of claim 13, wherein each of said panels and tiles is larger in the horizontal and vertical dimensions than said openings, and wherein said panels are connected to said frame along the perimeter edge thereof.

15. A method of forming a curtain wall comprising:

15 providing a frame having horizontal and vertical mullions spaced apart from each other, said horizontal and vertical mullions forming a plurality of openings therein;

connecting a plurality of support panels made of a light weight material onto said frame, said panels being positioned on said frame within said openings, wherein each of said panels has substantially the same size and shape as said openings, and has a
20 front surface that extends along a plane that is substantially the same as, or in front of, the front surface of said frame; and

applying structural silicon to said panels and attaching tiles onto said panels using said structural silicon.